

Application/Control Number: 10/091,689
Art Unit: 2654

Docket No.:2001-0105

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of dynamic re-configurable speech recognition comprising:

determining an identity of a speaker based, at least in part, on a user identifier;

repeatedly determining parameters of a background model based on sampled information collected at a periodic time interval during a received voice request;

determining parameters of a transducer model;

determining adapting a speech recognition model based on user-specific transformations corresponding to the determined identity of the speaker and on at least one of the background model or the transducer model;

re-scoring automatic speech recognition using the speech recognition model comprising:

generating word lattices representative of speech utterances in the received voice request,

concatenating the word lattices into a single concatenated lattice,

applying at least one language model to the single concatenated lattice in order to determine word lattice inter-relationships;

determining information in the received voice request based on the re-scored results of the speech recognition model; and

adjusting the periodic time interval based, at least in part, on determined changes in the sampled information.

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2. (Currently Amended) The method of claim 1, further comprising:
generating a confidence score ~~after applying the speech recognition model~~ to
determine whether the generated word lattices are acceptable.
3. (Original) The method of claim 2, wherein:
the parameters of the background model are determined based on a first sample
period;
the parameters of the transducer model are determined based on a second sample
period; and
the confidence score is compared to a predetermined value in order to determine
whether to perform the automatic speech recognition process again.
4. (Currently Amended) The method of claim 2, further comprising:
saving at least one of the parameters of the background model and the parameters of
the transducer model;~~and~~
~~determining the adapted speech recognition model based on at least one of the~~
~~background model or the transducer model.~~
5. (Currently Amended) A system for dynamic re-configurable speech recognition
comprising:
a background model estimation circuit for repeatedly determining a background
model at a periodic time interval during a voice request based, at least in part, on estimated
background parameters based on collected sampled information;
a transducer model estimation circuit for determining a transducer model of the voice
request based, at least in part, on estimated transducer parameters;

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a background model adaptation circuit and a transducer model adaptation circuit for determining an adapted speech recognition model based on a speech recognition model and at least one of the background model or the transducer model;

a lattice concatenation circuit that concatenates at least two speech lattices based on speech utterances in the received voice request into a single lattice; and

a controller that applies at least one language model to the single concatenated lattice to determine relationships between the lattices, wherein

the controller is adapted to adjust the periodic time interval based, at least in part, on changes in the collected sampled information, and

the controller is adapted to determine an identity of a speaker based, at least in part on a user identifier and to apply user-specific transformations, corresponding to the identity of the speaker, to the speech recognition model.

6. (Previously Presented) The system of claim 5, wherein the controller generates a confidence score after applying the speech recognition model to determine whether the lattices are acceptable.

7. (Previously Presented) The system of claim 6, wherein,
the controller is configured to compare the confidence score to a predetermined value,
and
the controller is further configured to repeat automatic speech recognition of the voice request based, at least in part, on the comparing.

8. (Previously Presented) The system of claim 6, wherein the controller saves at least one of the background model or the transducer model into storage, and wherein the adapted

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speech recognition model is based on at least one of the background model or the transducer model.

9. (Currently Amended) A carrier wave encoded to transmit a control program usable for dynamic re-configurable speech recognition to a device for executing the control program, the control program comprising:

instructions for determining an identity of a speaker based, at least in part, on a user identifier;

instructions for determining parameters of a background model at a periodic time during a received voice request;

instructions for determining parameters of a transducer model;

instructions for ~~determining an adapted~~ adapting a speech recognition model ~~for a speech recognition model based on user-specific transformations corresponding to the determined identity of the speaker and~~ on at least one of the background model or the transducer model;

instructions for re-scoring the results of the automatic speech recognition using the adapted speech recognition model comprising:

instructions for generating lattices for speech utterances in the received voice request,

instructions for concatenating the lattices into a single concatenated lattice,
and

instructions for applying at least one language model to the single concatenated lattice in order to determine relationships between the lattices;

instructions for determining information in the received voice request based on the adapted speech recognition model and the re-scored results of the adapted speech recognition model; and

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instructions for adjusting the periodic time based, at least in part, on determined changes in sampled noise information.

10. (Previously Presented) The carrier wave of claim 9, wherein the control program further comprises:

instructions for periodically determining a new transducer model.

11. (Previously Presented) The carrier wave of claim 10, wherein,
the background model is determined based on a first sample period, and the transducer model is determined based on a second sample period.

12. (Currently Amended) The carrier wave of claim 10, further comprising:
instructions for saving at least one of the background model or the transducer model;
and
~~instructions for determining the adapted speech recognition model based on at least one of the background model or the transducer model.~~

13. (Currently Amended) A computer readable storage medium comprising:
computer-readable program code usable to program a computer to perform a method for dynamic re-configurable speech recognition, the method comprising:

determining an identity of a speaker based, at least in part, on a user identifier;

determining parameters of a background model at a periodic time during a voice request;

determining parameters of a transducer model;

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~~determining~~ adapting a speech recognition model based on user-specific transformations corresponding to the determined identity of the speaker and on at least one of the background model or the transducer model;

re-scoring automatic speech recognition using the speech recognition model, comprising:

generating word lattices representative of speech utterances in the received voice request,
concatenating the word lattices into a single concatenated lattice,
applying at least one language model to the single concatenated lattice in order to determine word lattice inter-relationships;
determining information in the received voice request based on the rescored results of the speech recognition model; and
adjusting the periodic time based, at least in part, on determined changes in sampled noise information.

14. (Currently Amended) A method of dynamic re-configurable speech recognition comprising:

determining an identity of a speaker based, at least in part, on a user identifier;

repeatedly determining parameters of a background model based, at least in part, on first sampled information collected at first periodic time intervals during a received voice request;

repeatedly determining parameters of a transducer model based, at least in part, on second sampled information collected at second periodic time intervals during a received voice request;

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determining a speech recognition model based on user-specific transformations
corresponding to the determined identity of the speaker and on at least one of the background
model or the transducer model;

re-scoring automatic speech recognition using the speech recognition model,
comprising:

generating word lattices representative of speech utterances in the received
voice request,

concatenating the word lattices into a single concatenated lattice, and

applying at least one language model to the single concatenated lattice in order
to determine word lattice inter-relationships; and

determining information in the received voice request based on the rescored results of
the speech recognition model.

15. (Previously Presented) The method of claim 1, further comprising:

repeatedly determining the parameters of the transducer model.

16. (Previously Presented) The system of claim 5, wherein the transducer model

estimation circuit is configured to repeatedly determine the transducer model at the periodic
time interval.

17. (Previously Presented) The computer readable storage medium of claim 13, wherein
the method further comprises:

repeatedly determining parameters of the transducer model at a periodic time.

18. (Previously Presented) The method of claim 14, further comprising:

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adjusting a length of the first periodic time intervals based, at least in part, on the collected first sampled information.

19. (Previously Presented) The method of claim 14, further comprising:

adjusting a length of the first periodic time intervals based, at least in part, on a frequency or a magnitude of determined changes in successively sampled ones of the first sampled information.

20. (Previously Presented) The method of claim 14, further comprising:

generating a confidence score after applying the speech recognition model to determine whether the generated word lattices are acceptable;
comparing the confidence score to a predetermined value; and
repeating automatic speech recognition of the received voice request based, at least in part, on a result of the comparing of the confidence score with the predetermined value.

21. (New) The method of claim 1, wherein the user identifier comprises a calling phone number.

22. (New) The method of claim 1, wherein the user identifier is based on rules associated with a phone of the speaker and a time.

23. (New) The system of claim 5, wherein the user identifier comprises a calling phone number.

24. (New) The system of claim 5, wherein the user identifier is based on rules associated with a phone of the speaker and a time.

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25. (New) The method of claim 14, wherein the user identifier comprises a calling phone number.

26. (New) The system of claim 14, wherein the user identifier is based on rules associated with a phone of the speaker phone and a time.